

ABSTRACT OF THE DISCLOSURE

A varactor-based ring oscillator to produce an output signal and method therefore are disclosed. The ring oscillator includes a first phase shift circuit having a first pole. The ring oscillator also includes a second phase shift circuit having a second pole and a third phase shift circuit having a third pole. The output of the third phase shift circuit is cross-coupled to the input of the first phase shift circuit. A phase shift circuit of the ring oscillator includes a pole that has a varactor and generates phase shift for the phase shift circuit. The varactor can be adjusted or varied to tune, the phase shift, the phase shift circuit and the frequency of the oscillator. If the varactor is in the final phase shift circuit of the oscillator, the varactor is coupled to a diode that supplies voltage to the varactor. A voltage control signal is applied to the pole, and to the oscillator, to generate the output signal having a specified frequency.